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ABSTRACT

The National Geographic Society believes that schools are the last major institutions in the United States to adopt new information technologies because of fear of change, fear of technology, and narrowly focused public policies. The results of this failure to modernize schools has been to graduate workers who can't meet minimum job requirements and to attempt to maintain a democracy without a properly informed citizenry. New telecommunications policy must be crafted that assures equal access for all children to educational technologies. New teaching practices must emphasize interaction between students and teachers. The National Geographic Society has a tradition of harnessing technology in the service of the community and linking technology and teaching in innovative ways. Distance education networks such as the National Geographic Kids Network is one of several educational networks that facilitate the exchange of information and advance the use of technology in educational systems. (DB)

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Schools and National Telecommunications Policy

by

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"I'm not against progress, it's change I don't like," Mark Twain once said. In the United States, it would be progress if our nation's children had universal access in school to the information technologies so prevalent today in the world outside the school walls. But fear of change and lack of commitment to improving our educational system are stalling progress and leaving our schools in an educational Stone Age.

Ask yourself, "When was the last time school was an exciting place to go." For most of us "over-thirty-somethings" it was probably during the Eisenhower era. Just about at the dawn of instant communications. Today the community outside the school walls literally pulses with information, while inside the school walls students are typically cloistered in cells with one adult trying to hold their attention by reading or talking—often not with them, but at them.

Schools are the last major institutions in the United States to adopt the new information technologies. Imagine a major industry today trying to survive without computers—or telephones. Teachers are the only white-collar professionals in America without access to telephones in their primary place of work, the classroom. Imagine a business, particularly one in a so-called knowledge industry, trying to survive without telephones accessible to its workers. It is a sad commentary that today we can instantly send messages 3,000 miles across this country to almost any location, and still not get them the last 200 feet into one of the most important places in the nation, the classroom. We need to revise our thinking about technology policy, and we need to create incentives to bridge the gap between the classroom and the community.

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We must modernize our educational system. We must heed the teacher's maxim: "In order to reach students, you must go in through their door and take them out through yours." The door to today's youth is through technology. Information technologies—for example, computers, modems, telephones, and televisions—are doors to today's children, doors through which we adults must go to win the battle for their hearts and minds. Only with commitment and support from enlightened citizens and public and corporate policymakers can we overcome the resistance to change and progress toward a modern society of learners. Incentives must be created and public policy must be shaped to provide equitable access to the teaching and learning tools of the 20th century and to enable our students, the leaders and producers of tomorrow, to learn and thrive. Yet fear of technology and short-sighted or narrowly focused public policies are retarding progress.

The National Geographic Society has a tradition of harnessing technology in the service of the community. The Society's mission is the increase and diffusion of geographic knowledge. Teaching and technology are inextricably linked at National Geographic. The Society's first salaried editor, Gilbert H. Grosvenor, was a school teacher before he joined the Society staff—at the urging of Alexander Graham Bell, the Society's second President. When the young teacher joined forces with the inventor, they set about to harness the power of one of the newest information technologies of that day, photography. Society membership grew as the use of photography increased. Clearly a door had been opened to reach a broader public increasingly hungry for knowledge. The first underwater color photograph, the first photograph from the stratosphere showing the curvature of the earth—these are but two examples from a string of Society photojournalistic accomplishments made possible through innovative uses of new technology. And true to its innovative traditions, as the technology of television emerged, the Society entered that door, creatively harnessing the medium to set new educational standards and reach an even larger public increasingly accustomed to receiving information electronically. Today, the Society continues to open new doors through creative educational applications for computers, telecommunications, and optical disks.

Yet, for the most part, teachers and students do not have equitable access to today's communications tools. Teachers are still trying to do their jobs with antiquated tools—chalkboards and in today's rapidly changing world, out-of-date textbooks. To capture students' attention, effective teaching must be part knowledge and part theater, but even the smartest and most energetic and dramatic teachers cannot compete successfully day after day with the almost mystical power of television, the immediacy of the nonjudgmental computer, and that magical dissolver of distance, the telephone.

Granted there is increasing pressure for change, both from inside and outside the school system, to bring technology into the classroom. But there are also counterbalancing pressures that tend to keep things the way they are. Some individual and institutional resistance to change is inevitable. It often masquerades as of scarcity of funding. There is no money, people say.

Why aren't we, as a society, making the investment to modernize our schools? For one reason, education is driven by public policy, not by the profit motive. Corporations, to survive and thrive, are forced by market competition to invest in technology and to retrain workers. To resist change invites economic disaster. Our education system is by and large not driven by market forces, although there are increasingly vocal constituencies calling for the infusion of marketplace principles into school management philosophy.

The question facing educators and policymakers should not be what it is going to cost to modernize our education system, but what it is going to cost if we do *not* make essential investments in technology—and training. As a democratic society, we are paying an increasingly high price economically, politically, and socially for our failure to modernize our schools. We are graduating workers who cannot meet minimum job requirements and who cannot handle the technology of the modern workplace. We are trying to maintain a democracy without a properly informed citizenry. Too many of our citizens have not developed critical thinking skills. And we are undermining our social fabric by putting children through an outmoded school system that turns off more kids than it turns on.

One can see in two rooms of a small, rural school in Arkansas the contrast between what is and what could be. In one room students participate in a long-distance learning experience using satellite television to study German. The room is a beehive of activity with students teamed behind computer terminals sharing tasks to solve problems, complete exercises, and then participate in a telephone dialog with their professor at a university in Oklahoma. There can be little doubt that these children are learning with a gusto and intensity rarely seen now except in afterschool activities. Across the hall about a dozen students (this being a small, rural school), seated as far apart from one another as the anchored desks permit, are slouched so low in their chairs that one wonders whether they will ever rise and walk erect again. In the front of the room, on a raised platform, oblivious to the body language of his charges, stands the solitary instructor, reading monotonously from a textbook; the pall of gloom in the room all the more palpable for the energy emanating from the one across the hall. In one room students are active participants in the learning process; in the other, they are disassociated from one another, from the teacher, and from the subject of study. In the one room it is hands-on and minds-on; the atmosphere is literally charged with the electricity of human energy and technology. In the other, it is hands-off, minds-off.

Look for a moment at the impact of technology in the workplace. Where personal computers and telecommunications networks have put information in the hands of the workers, pyramidal hierarchies are flattened and employees are empowered and energized. In an intensely competitive environment, large and small businesses have available to them diverse and varied communications products and services to meet the needs of their employees and their customers. Why is it that our nation's schools and their employees and customers—our nation's young people, our future leaders—are not similarly and universally the beneficiaries of such essential and varied services?

Look also at the impact of technology on society. Just as the Berlin Wall dissolved before the eyes of the world, the boundaries that exist between the classroom and the community can be dissolved by the introduction of computers, modems, and telephone lines. Children the world over, like workers in modern industry, can be linked in sharing data—as, for example, students on the National Geographic Kids Network, testing the acidity of their local rainfall and comparing results with other students throughout the United States and in other countries. This is one of several educational networks that have demonstrated the motivational and pedagogic power of telecommunications. Such networks not only facilitate exchange of information, but also foster the transformation of that information into knowledge by encouraging the exercise of critical thinking skills, as actively involved students grapple with issues of scientific and social importance. And, just as students in Arkansas can talk with a professor in Oklahoma, students in Brazil can communicate directly with students in Boston about ozone or about efforts to arrest deforestation.

How can our education system keep pace with 20th century realities? How can we stimulate and enable our education system to respond to change and improve, when so many of our current regulations of telecommunications tend to benefit large corporations and simultaneously erect barriers for schools? How can we, as a nation, ensure equitable and universal access to the diverse and varied products and services now benefiting other sectors of our society and economy?

It is time to craft a new, rational telecommunications policy that eliminates restrictions that hurt schools. Instead, we should build incentives for all communications carriers to serve the needs of our next generation of workers and future leaders. Regulation should be aimed at assuring equal access for all our children to the technologies available to the business community. If we fail to do so, we will quite literally fail to connect with our children, and we will most certainly fail to connect them to the world they will inherit.